

REMARKS

Claims 1-39 and 43-84 are pending.

With this amendment, claims 1, 31, and 45 are amended. Claims 7 and 65-83 are cancelled in favor of the prosecution of the remaining pending claims. New claims 85-89 are presented herein.

Rejection of claim 1

Independent claim 1 was rejected by the Examiner under 103(a) over a combination of Ashurst and Zazerra (6,537,380) or Ashurst and Chinn (6,830,950). It is respectfully submitted that claim 1 as amended is not disclosed or suggested by Ashurst, Zazerra, and Chinn, either individually or in any combinations thereof. Specifically, claim 1 expressly recites, among other features, that a step of introducing the prepared cleaning agent into the chamber for cleaning a surface of the microelectromechanical device in the chamber, wherein the temperature of the chamber is between 100 °C and 200 °C. In contrast, Ashurst described measurements of cleaning a sample with ozone in Ultraviolet light (UVO) (experimental section). Ashurst also described applications of anti-stiction materials to the sample with the sample substrate at temperatures from 20-50C (results and discussion section). However, Ashurst does not disclose or suggest the above feature as set forth in claim 1. Zazerra does not describe the temperature at which MEMS samples are cleaned. Chinn does not remedy the deficiencies of Ashurst and Zazerra. Chinn disclosed ranges of temperatures at which the chamber is cleaned (i.e. 20 to 80C, col 20, line 53), and the temperature of the substrate at which an anti-stiction material (SAM) is applied to the substrate (col 20, line 19). Chin does not teach or suggest the feature set forth in claim 1 of this patent application. Similar to Chinn, Kobrin (2005/0109277) disclosed a temperature range of 15 – 100C. However, such temperature range in Kobrin is for applying anti-stiction materials (SAMs) to the sample, but not for cleaning the sample.

Because Ashurst, Zazerra, Chinn, and Kobrin, either individually or in any combinations thereof, do not disclose or suggest all features of claim 1, claim 1, as well as claims 2-30 that

depend from claim 1, is patentable over Ashurst, Zazerra, Chinn, and Kobrin. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of claim 31

Independent claim 31 was rejected by the Examiner under 103(a) over Ashurst in combination with Zazerra or Chinn further in combination of Malone (6,951,769). This rejection is respectfully traversed for at least the following reasons.

Claim 31 expressly recites, among other features, a step of introducing the gaseous modification agent into the chamber such that the gaseous modification agent is delivered through a micro-opening of the assembly to the surface of the microelectromechanical device for modifying the surfaces of the microelectromechanical device, wherein the micro-opening is between a first substrate and a second substrate that is glass having a reflective and deflectable mirror plate formed thereon; wherein the micro-opening has a characteristic dimension around 10 micrometers or less. This feature is nowhere disclosed or suggested by Ashurst, Zazerra, Chinn, or Malone. As indicated by the Examiner in the Office Action, Ashurst fails to teach the MEMS device being part of an assembly (e.g. a partially packaged device) and then into the chamber for cleaning. Though Malone described an opening (abstract and item 240 in FIG. 2C), Malone does not disclose or suggest the micro-opening has a characteristic dimension of 10 microns or less. Moreover, the micro-opening of Malone is between the package lid (225) and package substrate 205 in FIG. 2c), which is distinct from the micro-opening set forth in claim 31 between a first substrate and a second substrate having the reflective and deflectable mirror plate. Because Ashurst and Malone, either individually or in combination, fail in teaching or suggesting all features of claim 31, claim 31, as well as claims 32-44 that depend from claim 31, is patentable over Ashurst, Zazerra, Chinn, or Malone. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of claim 45

Independent claim 45 was rejected by the Examiner under 103(a) over Ashurst in combination with Zazerra, Chinn, and Malone.

With this amendment, claim 45 is amended to expressly recite, among other features, the temperature of the chamber is between 100 °C and 200 °C. It is respectfully submitted that claim 45 is patentable over Ashurst, Zazerra, Chinn, and Malone for at least the same reason for claim 1. Reconsideration and withdrawal of the rejection are respectfully requested.

Rejection of claim 56

Independent claim 56 was rejected by the Examiner under 103(a) over Ashurst in combination with Zazerra, Chinn, and Malone. This rejection is respectfully traversed for at least the following reasons.

Claim 56 expressly recites, among other features, a step of introducing a gaseous modification agent into the chamber such that the agent is delivered through an opening of the assembly to the surface of the microelectromechanical device, further comprising: a) introducing a first component of the agent into the chamber at a first pressure; and b) introducing a second component of the agent into the chamber at a second pressure that is higher than the first pressure. This feature is nowhere disclosed or suggested by Ashurst, Zazerra, Chinn, or Malone.

Because Ashurst, Zazerra, Chinn, or Malone do not disclose or suggest each and every feature of claim 56 either individually or in combination, claim 56, as well as claims 57-64 that depend from claim 56, is patentable over Ashurst, Zazerra, Chinn, or Malone. Reconsideration and withdrawal of the rejection are respectfully requested.

New claims

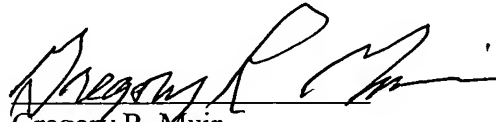
New claims 85-89 are presented herein with claim 85 being independent.

Claim 85 expressly recites, among other features, the steps of introducing a first cleaning agent into the chamber for cleaning a surface of the microelectromechanical device in the chamber, wherein the chamber has a first pressure; and introducing a second cleaning agent into

the chamber for cleaning the surface of the microelectromechanical device in the chamber, wherein the chamber has a second pressure that is different from the first pressure. It is respectfully submitted that the above features are nowhere disclosed or suggested by Ashurst, Zazerra, Chinn, or Malone. Claim 85 is patentable for at least the same reasons of claim 56.

It is believed that this application is in condition for allowance. Favorable consideration and prompt allowance are respectfully requested. In the event any fees are required in connection with this paper, please charge our Deposit Account No. 501516.

Respectfully submitted,


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